

REMARKS

[0001] Applicant respectfully requests reconsideration and allowance of all of the claims of the application. Claims 1-20 are presently pending. Claim 7 is amended herein.

Formal Request for an Interview

[0002] If the Examiner's reply to this communication is anything other than allowance of all pending claims, then I formally request an interview with the Examiner. I encourage the Examiner to call me—the undersigned representative for the Applicant—so that we can talk about this matter so as to resolve any outstanding issues quickly and efficiently over the phone.

[0003] Please contact me to schedule a date and time for a telephone interview that is most convenient for both of us. While email works great for me, I welcome your call as well. My contact information may be found on the last page of this response.

Allowable Subject Matter

[0004] Applicant would like to thank the Examiner for indicating allowability for claims 7-8. Claim 7 has been amended to include the recitations of claim 1, claim 5, and claim 6 as indicated by the Examiner for allowability.

Claim Amendments

[0005] Without conceding the propriety of the rejections herein and in the interest of expediting prosecution, Applicant amends claim 7 herein. Claim 7 is amended to include subject matter from independent claim 1 and dependent

claims 5 and 6. As such claim 7 and claim 8 are now in condition for allowance as indicated by the Examiner.

Substantive Matters

Claim Rejections under § 103

[0006] The Examiner rejects claims 1-6 and 9-20 under § 103 (although the Examiner has mistakenly indicated that claims 1-20 are rejected on page 3 of the Office Action). For the reasons set forth below, the Examiner has not made a prima facie case showing that the rejected claims are obvious.

[0007] Accordingly, Applicant respectfully requests that the § 103 rejections be withdrawn and the case be passed along to issuance.

[0008] The Examiner's rejections are based upon the following references in combination:

- **Ngo et al 6,525,515:** *Ngo et al* US Patent No. 6,525,515 (issued February 25, 2003); and
- **Menniti 4,723,191:** *Menniti* US Patent No. 4,723,191 (issued February 2, 1998).

Obviousness Rejections

Lack of *Prima Facie* Case of Obviousness (MPEP § 2142)

[0009] Applicant disagrees with the Examiner's obviousness rejections. Arguments presented herein point to various aspects of the record to demonstrate that all of the criteria set forth for making a *prima facie* case have not been met. To establish *prima facie* obviousness of a claimed invention, all of the claim recitations must be taught or suggested by the prior art¹ and "all words in a claim must be considered in judging the patentability of that claim against the prior art."² Further, if prior art, in any material respect teaches away from the claimed invention, the art cannot be used to support an obviousness rejection.³ Moreover, if a modification would render a reference unsatisfactory for its intended purpose, the suggested modification / combination is impermissible.⁴

Based upon Ngo et al 6,525,515 and Menniti 4,723,191

[0010] The Examiner rejects claims 1-6 and 9-20 under 35 U.S.C. § 103(a) as being unpatentable over Ngo et al 6,525,515 and Menniti 4,723,191. Applicant respectfully traverses the rejection of these claims and asks the Examiner to withdraw the rejection of these claims.

¹ *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)

² *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970)

³ *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed Cir. 1997)

⁴ See MPEP § 2143.01

Independent Claim 1

[0011] Applicant submits that the combination of Ngo et al 6,525,515 and Menniti 4,723,191 does not teach or suggest at least the following elements as recited in this claim:

- “first means for turning-off the switch with a turn-off delay in the presence of a reverse polarity”; and
- “second means for turning on the switch with a turn-on delay shorter than the turn-off delay, when the polarity is normal.”

[0012] The Examiner indicates (Action, p. 4-5) the following with regard to this claim:

With respect to claim 1, 3, 9-11, 13-20 Ngo teaches a device for protecting a circuit against a polarity reversal of a connection to a power supply, the device comprising: a controllable switch (items N1 or N40) interposed on said connection between a first terminal (see first ground "-" terminal exiting supply) of a first voltage of said power supply and a first terminal of said circuit (see first terminal of pluggable system); and first means (see for example UVLO connection of controller item 44) for turning off the switch with a turn-off delay (formed with items R41 and R42) in the presence of a under voltage; and second means (items Z1-Z3) for turning on the switch with a turn-on delay, when the polarity is normal (power is good).

Ngo does not teach the supply is a DC supply, the under voltage is a reverse polarity or the differences in the delay times. Ngo teaches only a general power supply and not the use of a DC type supply, however the use of DC powered computer systems are well known.

Ngo does not teach sensing of the polarity the voltage, Ngo only teaches the under voltage is a minimum voltage level. Menniti

(col. 2 lines 10-35) teaches a under voltage detection circuit where the under voltage is a negative polarity voltage level and triggering a turnoff response. Menniti further teaches the triggering is controlled by the connection of one or more circuit elements (Z2, see col. 5 line 1) in order to allow the setting of the triggering circuit. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ngo to use a DC supply to power computer components which require DC input power and to set UVLO to a negative voltage polarity level in order to reduce damage to circuit components.

Ngo teaches the turn on delay associated with the second means may be programmed or set (col. 5 line 55), however makes no comparison to the delay for turning off. Menniti teaches the setting of the triggering circuit to turn off the in presence of a reverse polarity. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Ngo to program a delay (select resistance or circuit element values) such that a shorter turn on delay is set in order to allow power to flow to the device quickly.

[0013] Claim 1 recites a device for protecting a circuit against a polarity reversal having a first means for turning-off a switch with a turn-off delay in the presence of a reverse polarity and second means for turning on the switch with a turn-on delay shorter than the turn-off delay, when the polarity is normal.

[0014] For example, referring, e.g., to FIGS. 2 and 4 and paragraphs 53-61 of the present application, a device 8 protects a circuit 1 against a polarity reversal of a connection to a D.C. power supply Vbat. The device 8 comprises a first means 88 for turning off a switch 81 with a turn-off delay, and a second means 86 for turning on the switch 81 with a turn-on delay shorter than the turn-off delay. For example, in an embodiment, the turn-on delay is at least ten times shorter than the turn-off delay (paragraph [61]). This may be desirable due to the required speeds for the starting/restarting of the control circuit 1 (paragraph [61]).

[0015] To recap the statements of the Examiner in the Office Action:

- Ngo et al 6,525,515 does not teach that the power supply is a DC power supply;
- Ngo et al 6,525,515 does not teach sensing of the polarity the voltage and merely senses under voltage;
- Ngo et al 6,525,515 makes no comparison to the delay for turning off the switch with respect to turning on the switch.
- Ngo et al 6,525,515 in and of itself does not teach two separate means for actuating a switch for coupling a power supply to a circuit.

[0016] Notwithstanding the many stated shortcomings in the teachings of Ngo et al 6,525,515, the Examiner asserts that Menniti 4,723,191 accounts for each and every one of these deficient teachings. Applicants respectfully disagree.

[0017] Menniti 4,723,191 fails to teach or even suggest a second means for turning on the switch with a predetermined turn-on delay. Furthermore, Menniti 4,723,191 fails to teach or even suggest a specific relationship between a turn-on delay and a turn-off delay, where the turn-on delay is shorter than the turn-off delay. As a result, the prior art of record simply does not teach each and every recitation in claim 1 and a *prima facie* case for obviousness cannot be held.

[0018] Notwithstanding these clear omissions in the teachings of the prior art of record, the Examiner maintains the conclusion that a person skilled in the art would have sought to combine these teachings to arrive at the present claim language of claim 1. In concluding this, the Examiner states that such a motivation exists because the combination would allow the power circuit to function more quickly. This is simply counter to an advantage of the circuit of claim 1 in that protection against connection to a power supply in a reverse polarity manner is a primary concern and not the speed of said connection. Such broad, conclusory statements do not come close to adequately addressing the issue of motivation to combine, are not evidence of obviousness, and therefore are improper as a matter of law.¹

[0019] Further, neither Ngo et al 6,525,515 nor Menniti 4,723,191 does not teach a device for protecting a circuit against a polarity reversal of a connection to a D.C. power supply, the device comprising a first means for turning off a switch with a turn-off delay, and a second means for turning on the switch with a turn-on delay shorter than the turn-off delay. In fact, Ngo et al 6,525,515 does not teach or even suggest a device for protecting a circuit against a polarity reversal of the power supply. Instead, Ngo et al 6,525,515 teaches control electronics 44 that is powered by the input supply 42, and thus would not even function if the polarity of the input supply 42 is reversed (FIG. 2). As a result, Ngo et al 6,525,515 and the present application relate to totally different fields. Furthermore, the turning-off of the switching element N1 is quicker than the

¹ *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999)

turning-on (auto-restart) of the switching element N1 (col. 4, lines 30-59). This is completely counter to the recitations of claim 1. Thus Ngo et al 6,525,515 specifically teaches away from the recitations of claim 1.

[0020] Moreover, applicants submit that the Office Action is using hindsight reasoning. As a matter of law, obviousness may not be established using hindsight obtained in view of the teachings or suggestions of the applicants.¹ To guard against the use of such impermissible hindsight, obviousness needs to be determined by ascertaining whether the applicable prior art contains any suggestion or motivation for making the modifications in the design of the prior art article in order to produce the claimed design. The mere possibility that a prior art teaching could be modified or combined such that its use would lead to the particular limitations recited in a claim does not make the recited limitation obvious, unless the prior art suggests the desirability of such a modification.²

[0021] As shown above, the combination of Ngo et al 6,525,515 and Menniti 4,723,191 does not teach or suggest all of the elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

¹ *W.L. Gore & Assocs., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1551, 1553, 220 USPQ 303, 311, 312-13 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984).

² See *In re Gordon*, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

Dependent Claims 2-6

[0022] These claims ultimately depend upon independent claim 1. As discussed above, claim 1 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Independent Claim 9

[0023] Applicant submits that the combination of Ngo et al 6,525,515 and Menniti 4,723,191 does not teach or suggest at least the following elements as recited in this claim:

- “a first delay element coupled to the switch and operable to disable the switch from conducting current at a first predetermined time after the polarity reverses”; and
- “a second delay element coupled to the switch and operable to enable the switch to conduct current at a second predetermined time after the polarity returns to the predetermined polarity, the second predetermined time being shorter than the first predetermined time.”

[0024] The Examiner indicates (Action, p. 4-5) the same reasoning for rejection as recited above with respect to the rejection of claim 9.

[0025] Claim 9 recites a first delay element coupled to a switch and operable to disable the switch from conducting current at a first predetermined time after the polarity reverses and a second delay element coupled to the switch and operable to enable the switch to conduct current at a second predetermined time after the polarity returns to the predetermined polarity, the second predetermined time being shorter than the first predetermined time.

[0026] Again, to recap the statements of the Examiner in the Office Action:

- Ngo et al 6,525,515 does not teach that the power supply is a DC power supply;
- Ngo et al 6,525,515 does not teach sensing of the polarity the voltage and merely senses under voltage;
- Ngo et al 6,525,515 makes no comparison to the delay for turning off the switch with respect to turning on the switch.
- Ngo et al 6,525,515 in and of itself does not teach two separate means for actuating a switch for coupling a power supply to a circuit.

[0027] Notwithstanding the many stated shortcomings in the teachings of Ngo et al 6,525,515, the Examiner asserts that Menniti 4,723,191 accounts for each and every one of these deficient teachings. Applicants respectfully disagree.

[0028] Menniti 4,723,191 fails to teach or even suggest a second delay element operable to enable the switch to conduct current at a second predetermined time after the polarity returns to the predetermined polarity. Furthermore, Menniti 4,723,191 fails to teach or even suggest a specific relationship between a turn-on delay and a turn-off delay, where the turn-on delay is shorter than the turn-off delay. As a result, the prior art of record simply does not teach each and every recitation in claim 9 and a *prima facie* case for obviousness cannot be held.

[0029] Notwithstanding these clear omissions in the teachings of the prior art of record, the Examiner maintains the conclusion that a person skilled in the art would have sought to combine these teachings to arrive at the present claim language of claim 9. Such broad, conclusory statements do not come close to adequately addressing the issue of motivation to combine, are not evidence of obviousness, and therefore are improper as a matter of law.¹

[0030] Further, neither Ngo et al 6,525,515 nor Menniti 4,723,191 does not teach a device for protecting a circuit against a polarity reversal of a connection to a D.C. power supply, the device comprising a first and second delay elements for actuating a switch with a turn-on delay shorter than the turn-off delay. In fact, Ngo et al 6,525,515 does not teach or even suggest a device for protecting a circuit against a polarity reversal of the power supply. Instead, Ngo et al 6,525,515 teaches control electronics 44 that is powered by the input supply 42, and thus would not even function if the polarity of the input supply 42 is reversed

¹ *In re Dembiczak*, 175 F.3d 994, 999, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999)

(FIG. 2). As a result, Ngo et al 6,525,515 and the present application relate to totally different fields. Furthermore, the turning-off of the switching element N1 is quicker than the turning-on (auto-restart) of the switching element N1 (col. 4, lines 30-59). This is completely counter to the recitations of claim 9. Thus Ngo et al 6,525,515 specifically teaches away from the recitations of claim 9.

[0031] As shown above, the combination of Ngo et al 6,525,515 and Menniti 4,723,191 does not teach or suggest all of the elements and features of this claim. Accordingly, Applicant asks the Examiner to withdraw the rejection of this claim.

Dependent Claims 10-12

[0032] These claims ultimately depend upon independent claim 9. As discussed above, claim 9 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Independent Claims 13, 17, 18, and 20

[0033] Applicant submits that the combination of Ngo et al 6,525,515 and Menniti 4,723,191 does not teach or suggest at least the similar elements as recited in similar claims 1, 9 and 13 as discussed above. Claims 17, 18 and 20 are directed to a vehicle and system claims similar to the previously discussed independent claims. As shown above, the combination of Ngo et al 6,525,515 and Menniti 4,723,191 does not teach or suggest all of the elements and features

of these claims. Accordingly, Applicant asks the Examiner to withdraw the rejection of these claims.

Dependent Claims 14-16

[0034] These claims ultimately depend upon independent claim 13. As discussed above, claim 13 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, some or all of these claims may also be allowable for additional independent reasons.

Dependent Claim 18

[0035] This claim ultimately depends upon independent claim 17. As discussed above, claim 17 is allowable. It is axiomatic that any dependent claim which depends from an allowable base claim is also allowable. Additionally, this claim may also be allowable for additional independent reasons.

Conclusion

[0036] All pending claims are in condition for allowance. Applicant respectfully requests reconsideration and prompt issuance of the application. If any issues remain that prevent issuance of this application, the **Examiner is urged to contact me before issuing a subsequent Action.** Please call or email me at your convenience.

[0037] Any additional fees required as a result of this amendment have been paid from the below-referenced deposit account as filed herewith. Should further payment be required to cover such fees you are hereby authorized to charge such payment to Deposit Account No. 07-1897.

Respectfully Submitted,

Graybeal, Jackson, Haley, LLP
Representatives for Applicant

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